

From these experiments there appears to be a considerable difference between three of the four varieties of kino known in commerce, but the first and fourth appear to be nearly the same. The most remarkable differences are, the small portion of resin which that from Botany Bay and Amboyna contain; the blue colour of the precipitate of the Jamaica variety by the oxysulphate of iron; and the effect of the solution of potash in rendering that from Africa transparent, while it precipitates the 2d and 3d varieties. The predominant principles in all the varieties are tannin and extractive matter; and the portion of resin in the 1st and 3d varieties enables ether to take up their colouring matter and some extractive, whilst the second variety is scarcely affected by it. Dr. Duncan¹ and Vauquelin² observed, that although heat increases the solvent power of water over kino, yet that a substance insoluble either in water or alcohol always remains. Vauquelin also found that the solutions form a precipitate with tartarized antimony and salts of iron.

The best menstruum is diluted alcohol.

Medical properties and uses. — Kino is a powerful astringent. Like catechu it is employed in obstinate chronic diarrhœas, uterine and intestinal hæmorrhagies, and fluor albus; but as it is less certain in its qualities than catechu, it is less used. Externally it has been applied as a styptic, and to give tone to, and diminish the ichorous discharge of, flabby ill-conditioned ulcers.

It may be exhibited internally in substance, or in the form of watery infusion, or of tincture. The dose in substance is from grs. x. to ʒiſs. In ordering the infusion or tincture, it is necessary to recollect that solutions of isinglass, sulphate of iron, nitrate of silver, muriate of mercury, superacetate of lead, tartarized antimony, the alkalies, and the strong acids, are incompatible in prescriptions with kino.

Official preparations. *Tinctura Kino.* L. E. D.

LACTUCA. *Spec. Plant. Willd.* iii. 1523.

Cl. 19. *Ord.* 1. *Syngenesia æqualis.* *Nat. ord.* *Compositæ semiflosculosæ* Linn. *Cichoraceæ* Juss.

G. 1404. *Receptacle* naked. *Calyx* imbricate, cylindrical, with a membranous margin. *Pappus* simple, stipitate. *Seed* even.

Species 1. *L. Sativa.* Garden Lettuce. *Blackwell.* t. 8.

¹ *LACTUCA SATIVA.*

Species 12. *L. virosa.* Strong-scented Lettuce. *Med. Bot.* 2d edit. 75. t. 31. *Smith Flora Brit.* 819.

¹ *Nicholson's Journal,* vi. 234.

² *Annales de Chimie,* xlv. 321. Vauquelin states generally that the salts of iron precipitate kino green; but Dr. Duncan justly observes, that by the red sulphate it is precipitated black: the sulphate only precipitates it green.

Official. — LACTUCE SATIVA HERBA: LACTUCARIUM. The herbaceous part and inspissated juice of the Garden Lettuce.

Syn. Laitue (F.) Lattich (G.) Lattuca (L.) Lechuga (S.)

This species of lettuce is cultivated almost generally over Europe. The root is fibrous; and sends up a corymbose stem, which sometimes rises three feet in height. The leaves are roundish, obovate or cordate, shining, crisped, rugose, irregularly plaited, and of a yellowish green colour: but the plant is so well known as to require no description. When it is in flower, the slightest touch of the pedicels occasions the exudation of drops of a white opaque milky looking fluid. The leaves and stem, immediately under the cuticle, contain a secreted juice, which is pellucid and colourless when in the vessels of the plant; but becomes milky when first exposed to the air, and afterwards acquires a brownish colour resembling that of East Indian opium. This is the *Lactucarium*¹ of the Edinburgh College. The best method of procuring it, as first suggested by Mr. John Young, Surgeon in Edinburgh, is to cut off the top of the stem, when it is in flower, about a foot above the ground, and to absorb the milky juice that exudes by means of a moist sponge, from which it can be again compressed into a proper vessel to inspissate. But as the cut surface soon ceases to bleed, another slice must be taken under the first, and this may be repeated as long as the fresh cut surface will yield the juice. The process may be repeated two or three times a day.

Qualities. — Lactucarium has the colour, and in some degree the taste and odour of opium. Distilled water dissolves the greater portion of it; and the clear solution, which is of a deep brown colour, when treated in the same manner as opium, discovers the presence of that principle detected in opium by Serturner, and denominated Morphia; on which its narcotic property depends. It contains besides extractive, resin and mucilage; and Dr. John states that caoutchouc, also, is one of its components.

Medical properties and uses. — Lactucarium has been proposed as a substitute for opium by Dr. Cox of Philadelphia; but its value as a narcotic has been more lately examined by Dr. Duncan, senior, who conceives it to be particularly well adapted for allaying the cough in phthisis pulmonalis: and his opinions have been confirmed by the experience of many other respectable practitioners. It may, undoubtedly prove useful as a soporific² where, from peculiar idiosyncrasy or other causes, opium cannot be taken. The dose is from ʒi. to ʒvj. in the

¹ This name was imposed by Dr. Duncan, sen. who first suggested its use as a narcotic. Vide *Obser. on Pulmonary Consumptions* by A. Duncan, M. D. Appen. p. 169.

² I have always found that, when I eat lettuce to supper it acts as a soporific.

form of pill: or, of a tincture made with one ounce of lactucarium and a pint of diluted alcohol, from ten to sixty drops may be taken.

• Official preparations. — *Succus spissatus Lactucæ Sativæ*. E.

2. LACTUCA VIROSA.

Official. — *LACTUCÆ VIROSE HERBA*. Edin. Strong-scented Lettuce leaves.

Syn. *Laitue vireuse* (F.) *Lattuca Salvatica* (L.)

This is an indigenous biennial plant, found growing on the banks of ditches, and borders of fields, flowering in July and August. The stalk rises about three feet in height, erect, slender, prickly below, smooth above, round, paniced, and not very leafy. The leaves are rather smooth and toothed, the lower ones numerous, obovate, undivided; those of the stem smaller, often lobed, amplexicaule, with the midrib beset with prickles on the under side. The bractes are cordate and pointed. The flowers are numerous, compound, of a sulphur-yellow colour, on short peduncles, furnished with small scaly leaves, and one at the base of each. The calyx is oblong, and composed of small lanceolate scales; and the corolla consists of florets scarcely longer than the calyx. The seeds are elliptical, compressed, striated, black, and furnished with a stipitate scabrous pappus.

The leaves and stem under the cuticle contain a white opaque juice, that abounds more copiously when the plant is in flower; at which time, therefore, they should be gathered, and the juice immediately expressed.

Qualities. — The odour of the leaves is heavy and foetid, resembling in some degree that of opium; their taste is bitter and acrid: qualities depending on their milky juice. When triturated with water, the solution never clears; and the morphia, which is separated by treating it like opium, cannot be freed from the mucus of the extract.

Medical properties and uses. — The expressed juice is narcotic and diuretic (see *Preparations* and *Compositions*) The leaves themselves are not used.

Official preparation. *Succus spissatus Lactucæ virosæ*. E.

LAURUS. *Spec. Plant. Willd.* ii. 477.

Cl. 9. Ord. 1. Enneandria Monogynia. Nat. ord. Oleraceæ Linn.
Lauri Juss.

G. 798. Calyx none. Corolla calycine, six-parted. Nectary of three two-bristled glands, surrounding the germen. Filaments interior, glanduliferous. Drupe one-seeded.

Sp. 1. *L. Cinnamomum*. The Cinnamon tree. *Mat. Med.* 2d ed. 670. t. 233. *Percival's Account of Ceylon*, 4to. 346—350.

Sp. 2. *L. Cassia*. The Cassia tree. *Carua*, *Rheede Hort. Malabar.* i. p. 107. t. 59.

Sp. 3. *L. Camphora*. The Camphor Laurel. *Med. Bot.* 2d edit. 681. t. 236.

Sp. 10. *L. nobilis*. Common Sweet Bay. *Med. Bot.* 2d ed. 678. t. 235.

Sp. 34. *L. Sassafras*. Sassafras Laurel. *Med. Bot.* 2d edit. t. 234.

1. LAURUS CINNAMOMUM.

Official.—CINNAMOMI CORTEX. CINNAMOMI OLEUM. *Lond.* LAURI CINNAMOMI CORTEX. *Edin.* CINNAMOMUM; CORTEX, OLEUM ESSENTIALE. *Dub.* Cinnamon, and Oil of Cinnamon.

Syn. Canelle (*F.*) Kanohl (*G.*) Kaneel (*D.*) Caneila (*I.*) Canela (*S.*) Dârchini (*H.*) Dârcasita (*San.*)¹

The cinnamon tree is a native of Ceylon², growing in great abundance in many parts of the island, particularly near Columba. It also grows plentifully in Malabar, Cochin China, Sumatra, and the eastern islands. It has been cultivated in the Brazils, the Mauritius, and other places. France is partly supplied from Guiana. It seldom rises above thirty feet in height; has a slender branching trunk covered with a brown ash-coloured cuticle, and from the root spring a number of suckers, which form a bush round the trunk. The leaves, which stand in opposite pairs in short slightly channelled petioles, are from six to nine inches in length, oblong, pointed, trinerved; when young reddish, but afterwards of a bright green colour; and have a spicy odour, and a hot taste when rubbed and chewed. The flowers, which appear in January, are white and inodorous, in axillary and terminal panicles. The petals are oval, pointed, concave, and spreading, longer than the filaments, which are in ternaries, flattish, erect, and the three innermost glanduliferous at the base; and the anthers are double. The fruit is an oval berry, resembling a small acorn, but with the apex depressed, and the pulp fleshy, with a terebinthine odour; and a taste not unlike that of the juniper berry.

There are several varieties of the cinnamon tree known at Ceylon. Seba enumerates ten, but the four following only are said to be barked: 1. Honey, or sharp sweet cinnamon, (*Rase Curundu* in the language of the natives,) which is the finest sort; 2. Snake cinnamon, (*Nai Curundu*), similar to the first; 3. Camphorated cinnamon, (*Capura Curundu*), so named from its having the odour of camphor, and the root yielding camphor by distillation; and 4. Bitter astringent cinnamon, (*Cahatte Curundu*),

¹ The Malays call cinnamon kayu-manis, which is sometimes pronounced as if it were written kaina-manis, which Mr. Marshall supposes to have been the original of the ancient Greek name kinnamomon.

² Notwithstanding the jealousy of the Dutch, the cinnamon tree, long before the British obtained possession of Ceylon, was cultivated at the Isle of France, in several parts of India, Jamaica, and some other of the West India islands. Mr. Miller first cultivated it in this country in 1768; and a plant of it has regularly flowered and ripened seed in the hot-house of the Bishop of Winchester at Farnham several years past.

which has smaller leaves than the former varieties.¹ The trees that grow in the valleys in a white sandy soil are fit to be barked when four or five years old, but those in a wet soil, or in shady places, require to be seven or eight years of age. The bark is good for nothing if the tree be older than eighteen years. The tree was formerly propagated by a species of pigeon, that ate the fruit, and voided the seed; but since Falck, one of the Dutch governors, about the middle of the eighteenth century, raised it from berries sown in his garden, it has been regularly cultivated.

The barking, particularly in the vicinity of Negombo and Matura, commences early in May, and continues until late in October. The *chaliahs*, or people who perform it, are under native officers called cinnamon *moodeliars*², who are answerable for the quantity barked. Branches of three years old are selected, and lopped off with a pruning knife, or bill hook called a *ketta*. To remove the bark, a longitudinal incision is made through it on both sides of the shoot, so that it can be gradually loosened, and taken off entire, forming hollow cylinders. The bark in this state tied up into bundles, is allowed to remain for twenty-four hours, by which a fermentation is produced that facilitates the separation of the epidermis, which with the green pulpy matter under it, is carefully scraped off. The bark now soon dries, contracts, and assumes the quilled form, after which the smaller pieces are put within the larger.³ The cinnamon, when dry, is tied up in bundles of 30 lbs. weight, and carried to the government store-house, where the quality is determined by inspection of the bundles. It was formerly chewed, and the surgeons who used to be thus employed, had their mouths so excoriated, as to be unable to continue the process longer than two days together: but tasting is now seldom had recourse to.

Cinnamon is brought home in bags or bales, weighing 92 lbs. each⁴: and in stowing it black pepper is mixed with the bales to preserve the cinnamon. According to Mr. Marshall's ac-

¹ The other sorts mentioned by Seba are: Sandy cinnamon, *Welle Coronde*, which feels gritty when chewed; Glutinous cinnamon, *Sewel Coronde*; Insipid and inodorous cinnamon, *Nicke Coronde*; Drum cinnamon, *Dawel Coronde*, so named because the natives make drums of the wood; Prickly cinnamon, *Calle Coronde*; Flowering cinnamon, *Mael Coronde*, the tree being always in bloom; and Three-leaved cinnamon, *Toupat Coronde*. *Phil. Trans.* xxxvi. 97—105.

² Under the Moodeliars are inferior officers, named *Mohandrams* and *Aratchays*; and in 1811 General Maitland appointed a superior, who is named *Maha-Moodeliar*.

³ Prior to the 15th century, all the cinnamon used in Europe was imported by the Arabs, and passed through the hands of the Venetians; after this the Portuguese became the sole importers, and continued to be so until 1645, when their trade was divided with the Dutch, who obtained entire possession of it in 1658; and were the principal cinnamon merchants until 1796, when Ceylon fell into the power of the British.

⁴ The bags are made of cloth of the cocoa nut bark.

count, the annual quantity of cinnamon sold at the East India Company's sales, taken on an average of the last eight years, up to 1810, is 318,258 lbs.; at an average price of six shillings per pound.¹ But much cinnamon, of an inferior kind, reaches Europe through private merchants, particularly from China.

The *oil of cinnamon* is prepared by macerating the bark in sea-water for two days, then distilling with a slow fire, and separating the oil from the water with which it comes ² over. It is generally adulterated with alcohol or expressed oil. Eleven pounds of cinnamon are required to procure one ounce of the oil. Cinnamon is sometimes intermixed with cinnamon from which the oil has been drawn, and with cassia. The former is detected by the weakness of its odour and taste; and the latter by its thickness, smooth fracture, and remarkably slimy taste.

Qualities. — Cinnamon has a very pleasant fragrant odour, and a pungent aromatic sweetish taste; but when it is very hot, without sweetness, and leaves a mawkish taste in the mouth, it is of an inferior quality. The best is rather pliable, but breaks in splinters; is as thin as paper, and of a light yellowish colour: thickness and a dark or brown colour, are marks of inferiority. What is called Chinese cinnamon is darker coloured, rougher, denser, and breaks shorter. The taste is harsher, more pungent, and ligneous, without the sweetness of the Ceylon cinnamon. These qualities depend on the *essential oil*, which may be separated by macerating the bark in alcohol, and distilling the tincture; in which process the oil does not rise with the spirit, but remains in the retort. From 3xvj of the bark Neumann obtained only two scruples and a half of oil.³ It has a pale gold colour, is heavier than water, perfectly soluble in alcohol, and has the odour and taste of the cinnamon concentrated; But both a heavy and a light oil is obtained from cinnamon, 80 lbs. yielding about five ounces of the former, and two of the latter.

Medical properties and uses. — Cinnamon bark is astringent, cordial, and tonic. Hence it is found to be efficacious in alvine fluxes, proceeding from a weakened and languid state of the intestines, dyspepsia, and chronic nervous debility; and, when given in the form of watery infusion, it removes nausea, and checks vomiting. But the principal use of cinnamon is to cover the nauseous taste of other remedies. The *oil* is a powerful stimulant and stomachic; and is used as such in cramps

¹ *Annals of Phil.* vol. x. p. 358.

² The bark of the roots yields an aromatic essential oil, denominated oil of camphor, which is used in Ceylon as a rubefacient in painful affections of the joints, and in sprains.

³ *Neumann's Chemistry*, ii. 188.

of the stomach, flatulent colic, hiccough, and nervous languors. It is sometimes inserted into the hollow of a decayed tooth to allay the pain of tooth-ach.

The dose of the bark in powder is from grs. x to ʒj; that of the oil from mʒ to mʒj on a lump of sugar.

Official preparations. *Aqua Cinnamomi*. L. E. D. *Spiritus Cinnamomi*. L. E. D. *Tinct. Cinnamomi*. L. E. D. *Tinct. Cinnamomi comp.* L. *Pulvis Cinnamomi compositus*. L. E.

2. LAURUS CASSIA.¹

Official. LAURI CASSIÆ CORTEX; FLOS NONDUM EXPLICITUS.

Edin. Dub. The bark, and flower buds of the Cassia tree.

Syn. of the bark. Casse (F.) Casia (G.) Cannellina (I.) Seleckheh (Arab.) Tej (H.) Twacha (San.)—*of the buds.* Fleur de la Cannelle (F.) Cassia Bloemen (D.) Tejpatka konpul (H.) Sirnāgāpoo (Tam.)

The cassia tree is a native of Malabar, Ceylon, Sumatra, and Java; and has been generally supposed to be rather a variety of the cinnamon than a distinct species of *Laurus*; although Marsden's description of the plant², and Gärtner's of the fruit³, afford some reason for thinking that it is properly marked as a distinct species. It rises fifty feet in height, and gives out, almost from the bottom, large spreading horizontal branches: the leaves are from four to six inches long, elliptical, narrow, pointed, entire, smooth, longitudinally nerved, of a deep green colour above, and pale grey beneath: the flowers are in axillary clusters, six together on slender flower-stalks: they are monopetalous, white, small, and divided into six stellular points: the fruit is an ovate, oblong, black berry, with a mucronated apex, standing in a bell-shaped, coriaceous, angled, unequally five or six toothed calyx; it contains a bitterish pulp, and when dry is insipid and inodorous.

Like the cinnamon, those trees which grow in a dry soil and high exposed situation, yield a superior bark to those in a moist soil and shaded spot. The larger branches and the trunk are said to be the parts of the tree barked: and the cuticle only appears to be scraped off, the cellular integument being left, which, as the bark is taken from the larger branches, is thick, spongy, and full of a slimy mucus. This plant is never decorticated at Ceylon. According to Mr. Marshall⁴, the *Cassia bud* of commerce is the hexangular fleshy receptacle of the seed of the *L. Cinnamomum*, and not the *L. Cassia*, as supposed by the Dub-

¹ This is this Dawul Kurundu of the Cingalese, the Cannella Matto of the Portuguese, and the wilde Canule of the Dutch. *Marshall, Phil. Trans.* 1817.

² *History of Sumatra*, 125.

³ *De Fructibus*, ii. 69. t. 92. If Gärtner be correct, the fruit of the *Cassia* is depicted, instead of that of the Cinnamon, in the plate of the Cinnamon plant, in Woodville's Medical Botany.

⁴ *Annals of Phil.* vol. x. p. 245.

lin College. They are not prepared at Ceylon, but come chiefly from China, through Calcutta, Madras, and Bombay.

Cassia is imported in chests, half chests, and occasionally in quarter chests.

Qualities.—The odour of cassia bark is similar to that of cinnamon, but fainter; and the taste is more pungent, but less agreeable; appearing slimy when much chewed. It is of a cinnamon colour, in pieces more or less quilled, about one-tenth of an inch in thickness; which break with a short close fracture, and show it to consist of two parts, the inner darker and of a fine texture, and the outer paler and somewhat spongy. When these are separated, the inner part has all the sensible qualities of real cinnamon, only more pungency, whilst the outer has scarcely either flavour or taste: and I am of opinion that the allowing this cellular integument, from which the cinnamon is freed, to remain in the cassia, constitutes the chief cause of the difference between these two barks.¹ *Cassia buds* have the same odour and taste as the cinnamon bark. They are of a brown colour, and resemble a nail, with a round head, surrounded with the hexangular calyx, which gradually terminates in a point. Both the bark and buds yield in distillation with water an essential oil, similar to that of cinnamon, on which their qualities depend.

Medical properties and uses.—Cassia bark and buds are stimulant cordials; and are used in the same cases, and in the same manner as cinnamon bark.

Official preparation. *Aqua Lauri Cassiæ distillata.* E.

3. LAURUS CAMPHORA.

Official. CAMPHORA. Lond. Edin. CAMPHORA; RESINA.² Dub. Camphor.

Syn. Camphre (F.) Kampfer (G.) Canfora (I.) Alcanfor (S.) Cafoor (Arab.) Cafur (H.) Curfura (San.)

The species of laurel here designated, is a native of Japan. It yields camphor; but I have already stated, that the camphor which comes from Sumatra, that is, the greater part of what is brought to Europe, is the produce of the Dryobalans *Camphora*, a tree belonging to a different genus altogether from the laurel. The camphor laurel³ rises to a considerable height, is much branched, and covered with a smooth greenish bark. The leaves, which stand on long footstalks, are acutely lanceolate, entire, smooth, ribbed, of a pale yellowish green colour on the upper surface, and on the under glaucous. The flowers are

¹ The rejected, or third sort of cinnamon, prepared in Ceylon, has been imported into England and sold as cassia.

² This is an error of the Dublin College, chemists being now agreed that camphor is not a resin, but a proximate vegetable principle, sui generis.

³ Specimens of it are common in our hot-houses; but they rarely flower.

small, white, pedicellated, in roundish close clusters, which terminate long axillary peduncles. The corolla consists of six small ovate, unequal petals, enclosing a tuberculated bristled nectary, which surrounds the germen; the filaments are shorter than the corolla, and support round anthers; the germen is roundish, with a simple style and obtuse stigma. The fruit resembles that of the cinnamon.¹

The roots, wood and leaves of this tree have a very strong odour of camphor; and from the roots and smaller branches it is obtained by distillation. They are cut into chips, which are suspended in a net within a kind of still, or iron pot, the bottom of which is covered with water, and an earthen head fitted to it: heat is then applied, and the steam of the boiling water, penetrating the contents of the net, elevates the camphor into the capital, where it concretes on straws with which this part of the apparatus is lined.² But as we have already stated, the greater part of the camphor brought to Europe is obtained in Sumatra; where the trees which yield it are cut and split, and the camphor which is found concremented in the heart of them is picked out, and washed in a ley of soap. It is imported into this country in chests, drums, and casks; and is in small granular, friable masses, of a dirty white, or grayish colour, very much resembling in appearance half refined sugar. It often contains earth and other impurities.³

Formerly all the crude camphor brought to Europe was purified by the Venetians, and afterwards by the Dutch, who kept the art secret; but it is now practised to a considerable extent in this country. It is sublimed in glass vessels, after being mixed with one twentieth of its weight of quick lime; and afterwards fused either "by increasing the heat suddenly when the sublimation is almost ended, without transferring the camphor to different vessels, or by melting the sublimed flowers in a vessel for that purpose."⁴ Thus refined, it is in large

¹ Camphor is not the production of those plants merely from which that known in commerce is obtained, but has also been procured from the roots of the cinnamon, cassia, and sassafras laurels; from those of galangale, zedoary, ginger; and from cardamom seeds and long pepper. The essential oils of lavender, sage, thyme, peppermint, rosemary, and several other labiated plants, yield it: and an artificial camphor is prepared by passing muriatic acid gas through oil of turpentine. The varieties of camphor thus obtained, however, differ in some respects from common camphor.

² According to Kæmpfer, the process is carried on chiefly by the peasants of Satzuma. *Amoen.* 779.

³ Zea describes a variety of camphor which is procured in South America, from a tree, the botanical characters of which are not yet known; but which is termed *caratte* by the natives. The camphor exudes from the bark in the form of tears.

⁴ *Aikin's Dictionary of Chemistry*, art. *Camphor*. Professor Robison, who saw the process as it was conducted in Holland, says, that the camphor is in a liquid state in the subliming vessel. *Black's Lectures*, ii. 351.

round cakes, about two or three inches thick, concave on one side, convex on the other, and generally perforated.

Qualities.—Pure camphor has a strong, peculiar, fragrant, penetrating odour; and a bitter, pungent, aromatic taste. It is white, transparent, unctuous to the touch, and friable, breaking with a shining foliated or tabular fracture, which displays a crystalline texture: and although brittle, yet it is also in some degree ductile, and therefore not easily pulverised. It swims on water, its specific gravity being 0.9887¹: and is so volatile, that if it be not kept in well stopt vessels, it loses a very considerable proportion of its bulk and weight by evaporation. It melts at a temperature of 260°, and sublimes in close vessels, crystallizing unchanged in hexagonal plates. It is readily ignited, and burns with a brilliant flame, giving out much smoke. When triturated with water, very little is dissolved², although it communicates to the water its odour and pungency; but the addition of carbonic acid gas augments very much the solvent power of water over camphor. Alcohol, ether, the fixed and volatile oils, the sulphuric and nitric acids a little diluted, and the muriatic, the strong acetic, and the fluoric acids, dissolve camphor, which is again separated unaltered from these solutions by the addition of water. Concentrated sulphuric acid decomposes it, forming artificial tannin; and by repeatedly distilling it with nitric acid, it is converted into camphoric acid. Alkalies exert scarcely any action on camphor: but it unites with, and converts into a soft tenacious mass, the hardest resinous substances. Camphor, when mixed with clay, and distilled in close vessels, is decomposed, and resolved into a volatile oil and charcoal: hence, as a chemical compound, it appears to differ from the essential oils, only in containing a larger proportion of carbon.

Medical properties and uses.—Camphor is stimulant, narcotic, and diaphoretic, but its stimulant powers are very transitory, and followed by sedative effects. The Arabians appear to have first used camphor as a medicine³, and by them it was regarded as refrigerant; an opinion which, even in more recent times, has been the subject of much controversy. In moderate doses it operates as a cordial, increasing the heat of the body, exhilarating, softening, and rendering fuller the pulse, and promoting diaphoresis: in larger doses it allays irritation, and spasm, abates pain, and induces sleep. But in immoderate

¹ Brisson.

² Cadet asserts that one French pint of water dissolves about sixteen grains of camphor, which are again precipitated by pure potass. *Ann. de Chimie.* lxii. 132.

³ They called it *Camfur* as well as *Casoor*. *Clusius Exot.* 243, quoted by *Alston*.

doses camphor produces vomiting, vertigo, delirium, convulsions, and other deleterious effects.

As a stimulant, camphor is beneficially used in all fevers of the typhoid kind, cynanche maligna, malignant measles, confluent small-pox, and as an adjunct to bark and opium to check the progress of gangrene; and in spasmodic affections, as hysteria, epilepsy, chorea, asthma, and painful menstruation. Its narcotic and anodyne effects being produced with very little increase of pulse, it has been successfully employed for allaying pain and irritation even in some inflammatory diseases, as pneumonia, acute rheumatism, gonorrhœa, small-pox, when attended with convulsions, gout, and in the delirium of mania, and inflammatory fevers. But in these cases its use should be preceded by evacuations; and the remedy itself combined with nitre, or antimonials. Camphor is also given internally to obviate the irritating effects of some other medicines, as mezereon, cantharides, the saline preparations of mercury, and drastic purgatives; to correct the nauseating property of squill, and prevent the irritation it is apt to produce on the coats of the bladder.

Camphor may be administered in the solid form; but as in this state it is apt to occasion nausea, it is generally ordered in a state of minute division, suspended in fluids by means of mucilage or the yolk of eggs; sometimes by magnesia, which, assisting its division, and rendering it smooth as starch, admits of its combination with acids; and as several of the gum resins, when triturated with it, form a soft, uniform, soluble mass, they also may be employed for diffusing it in water.¹ It may be advantageously united with ammonia, aromatics, opium, bark, and other tonics, in low fevers and diseases of debility; with calomel, antimonials, digitalis, and neutral salts, in inflammatory diseases; with the fetid gums and other narcotics, in spasms and convulsive affections; and with squill and ipecacuanha, in pulmonary complaints.

As a local anodyne, camphor is used in frictions, dissolved in oils, alcohol, or acetic acid, for allaying rheumatic and muscular pains; and with the addition of laudanum we have found it of great efficacy when rubbed on the abdomen, in flatulent colic, dysentery, and inflammations of the viscera. In collyria it is useful in ophthalmia; and dissolved in oil, as an injection in ardor urinæ; and as an enema in the tenesmus occasioned by ascarides, or other irritations of the rectum. A

¹ Murray's *System of Mat. Med. and Pharm.* ii. 157.

² In some constitutions it must be exhibited in this form with caution; "two scruples of it given to a woman in a glyster, proved so irritating as to bring on pains resembling those of labour." Heberden. *Med. Trans.* vol. i. p. 473.

pill of camphor and opium put into the hollow of a carious tooth, affords almost immediate relief in tooth-ach.

The dose of camphor is from grs. ij to ʒj, repeated at shorter or longer intervals according to the extent of the dose. The bad effects of an overdose are most effectually obviated by opium.

Official preparations. *Mistura Camphoræ*. L. D. *Emulsio camphorata*. E. *Spiritus Camphoræ*. L. E. D. *Tinctura Camphoræ composita*. L. E. D. *Acidum acetosum camphoratum*. E. D. *Linimentum Camphoræ*. L. E. D. *Linimentum Camphoræ comp.* L.

4. LAURUS NOBILIS.¹

Official. LAURI BACCÆ ET FOLIA. *Lond.* LAURI NOBILIS FOLIA; BACCÆ; OLEUM FIXUM. *Edin.* Laurel berries and leaves, and the fixed oil of the berries.

Syn. Baies de Laurier (F.) Lorbeeren (G.) Bacchi di Lauro Riccio (I.) Bayas (S.)

This tree is a native of Italy and the south of Europe; but is cultivated in this country, and is not uncommon in our gardens, flowering in April and May. It is a handsome evergreen; and although it appears as a shrub in England, yet in its native soil and climate it rises twenty or thirty feet in height. The bark is smooth, and of a green olive colour. The leaves are lanceolate, about three inches long, and an inch and a half broad, on short petioles, smooth, entire, veined, often waved at the margin, of a firm texture, and a deep green colour. The flowers are male and female on different plants, in short racemes, and of an herbaceous or yellowish white colour. The corolla is divided in both descriptions of flowers into four oval segments. The berry is superior, of an oval shape, fleshy, and of a dark purple almost black colour.

Laurel berries, and the oil which is obtained by boiling the berries in water, are imported from the Streights. The simple expressed oil is insipid.

Qualities.—Both the *leaves* and *berries* have a sweet fragrant odour, and an aromatic, astringent taste; and the *oil*, which is of a yellowish green colour, has a stronger but similar odour and taste. Water distilled from the leaves shews traces of Prussic acid.

Medical properties and uses.—Bay leaves, berries, and oil; are stimulant and carminative. They were formerly given in flatulent colic, hysteria, and obstructed menstruation, but their internal use is now abandoned; and, as an external application, they are generally compounded with other stimulants.

5. LAURUS SASSAFRAS.

Official. SASSAFRAS; LIGNUM ET RADIX. *Lond.* LAURI SASSAFRAS LIGNUM, RADIX. *Edin.* SASSAFRAS; LIGNUM, CORTEX, RADIX. *Dub.* The wood, root, and bark of Sassafras.

Syn. Sassafras (F.) Sassafras (G.) Sassofrasso (I.)

¹ Δαφνη Dioscoridis.

This species of laurel is a native of North America and Cochinchina. It is cultivated in Jamaica; and withstands the cold of our climate so as to be frequently reared in gardens as an ornamental shrub. The flowers appear in May and June. In America the plant rises twenty or thirty feet in height, with the trunk about twelve inches in diameter, covered with a rough, furrowed, gray bark, and brownish towards the top. The leaves are of different shapes and sizes; some being oval, entire, and about four inches long and three broad; others lobed, about six inches long, and nearly as broad: they are of a lucid green colour, downy on the under surface, petiolate, and alternate. The flowers which appear in spring immediately under the leaves when they begin to be evolved, are small and produced in pendant panicles; and at the base of the pedicels are linear bractes. The corolla is divided into six narrow, convex, yellowish, or greenish white segments, inclosing, in the male flowers, nine stamens supporting yellow anthers. The hermaphrodite flowers, which are on a separate plant, have six stamens only, and a simple style. The berry is oval, and when ripe of a blue colour.

The sassafras laurel was discovered by the Spaniards, immediately after their conquest of Florida, in 1538, under Ferdinand de Soto, and termed by them cinnamon wood, on account of its odour.¹ It is imported in what are termed logs; which are straight and branched pieces, light, of a spongy texture, and covered with the thick rough bark. The bark is separated, and the wood then cut into chips, as is also the root.

Qualities. — Sassafras wood, root, and bark have a fragrant odour, and a sweetish aromatic taste. The wood is of a brownish-white colour; and the bark ferruginous within, spongy, and divisible into layers. Their sensible qualities and virtues depend on an essential oil, which can be obtained separate by distilling the chips or the bark with water. It is very fragrant, hot and penetrating to the taste, of a pale yellow colour, and heavier than water. Water extracts the virtues of sassafras partially; alcohol completely; and when the tincture is evaporated it leaves an extract which contains the whole virtue of the plant.

Medical properties and uses. — Sassafras is a stimulating diaphoretic and diuretic. It has been employed in cases of scurvy, chronic rheumatism, gout; and in cutaneous affections: and was once regarded as serviceable in lues venerea, but it has no pretension whatever to the character of an antisiphilitic. Its effects are very uncertain: and even the diaphoresis which it is

¹ *Savary's Dictionary*, ii. l. 487.

supposed to occasion, may rather be ascribed to the guaiac, and other more powerful medicines, with which it is generally combined. An infusion of the chips taken as tea, is a common domestic remedy in the above complaints; but I know instances in which it has been taken regularly every morning for a couple of years without any perceptible benefit. The infusion, however, is the best form of giving the remedy, as much of the oil is dissipated in making the decoction. The oil is sometimes given with the same intentions as the infusion.

Official preparations. *Oleum Sassafras*. L. E. D. *Decoctum Sarsaparillæ compositum*. L. D.

LAVANDULA. *Spec. Plant. Willd.* iii. 60.

Cl. 14. *Ord.* 1. Didynamia Gymnospermia. *Nat. ord.* Verticillatæ. G. 1099. *Calyx* ovate, somewhat toothed, supported by a bract.

Corolla resupine. *Stamens* within the tube.

Species 1. *L. Spica*. Lavender. *Med. Bot.* 2d ed. 221. t. 114.

Official. LAVANDULÆ FLORES. *Lond. Dub.* LAVANDULÆ SPICÆ FLORES. *Edin.* The flowers of Lavender.

Syn. Lavande (F.) Lavendelblumen (G.) Lavanda (L.) Alhazema (S.)

This plant is a perennial, a native of the south of Europe, but commonly cultivated in our gardens¹, flowering from June to September. It is a much branched shrub, rising in its proper soil often six feet in height; the woody part of the stem being covered with a rough brown bark, while that of the shoots, which are four cornered, is of a pale glaucous colour. The leaves of the most common variety are glaucous, narrow, nearly linear, and entire, the lower petiolate, and the upper ones sessile. The flowers are produced on the young shoots, in terminal spikes, which consist of interrupted whorls. The corolla is blue, tubular, and labiate, the upper lip larger and bifid, the lower divided into three segments. The filaments are within the tube, and support small simple anthers; the style, which is slender, and crowned with a bilobed stigma, rises from the centre of four naked seeds at the bottom of the tube.

There are two other varieties² of this species; but they are more rare, and do not differ in their sensible and medicinal qualities. The flowers are cut in dry weather, when they begin to blow.

Qualities. — Lavender flowers have an agreeable fragrant odour, and warm bitterish taste. Alcohol extracts their virtues completely, and elevates in distillation all their odorous parts; water acts less completely. The oil, however, on which their virtues depend, is obtained separate in distillation with water; in the proportion, according to Lewis³, of one ounce of oil from sixty ounces of the flowers.

¹ It was cultivated in England so early as 1568, according to Turner.

² β *L. angustifolia flore albo.* γ *L. latifolia.*

³ *Mat. Med.* 371.

Medical properties and uses. — Lavender is stimulant, and tonic. The oil extracted by alcohol enters into several compositions. The dried leaves in powder were used formerly as a sternutatory; but they are now neglected.

Official preparations. *Oleum Lavandulæ*. L. E. D. *Spiritus Lavandulæ*. L. E. D. *Spiritus Lavandulæ compositus*. L. E. D.

LEONTODON. *Spec. Plant. Willd.* iii. 1544.

Cl. 19. Ord. 1. Syngenesia Æqualis. Nat. ord. Compositæ Semi-flosculosi Linn. Cichoraceæ Juss.

G. 1407. Receptacle naked. Calyx double. Pappus stipitate, hairy. Species 1. L. *Taraxacum*.¹ Dandelion. *Med. Bot.* 2d ed. 39. t. 16.

Smith Flor. Brit. 822. Eng. Bot. 510.

Official. TARAXACI RADIX. *Lond.* LEONTODI TARAXACI HERBA, RADIX. *Edin.* TARAXACUM; (DENS LEONIS) RADIX, FOLIA. *Dub.* The root and leaves of common Dandelion.

Syn. Dent de Lion; Pissenlit (*F.*) Lowenzahn wurzel (*G.*) Tarassaco (*I.*) Cardilios tagarnina (*S.*)

This is one of our most common indigenous plants, flowering from April to September. The root is fusiform, and externally of a dark colour. The leaves are all radical, in general runcinate, but in very moist situations nearly entire², toothed, smooth, and of a pleasant green colour. The flower-stem is an erect, one-flowered simple scape, naked, smooth, fistulous, fragile, and abounding with a milky bitter juice. The flower is terminal, large, of a golden colour, and closes in the evening: the calyx is smooth, with the exterior scales loosely turned down: the florets are very numerous, ligulate, and toothed at the extremities. The receptacle is spheroid, and punctured. The seeds are obovate, furrowed, of a pale olive colour; and furnished with a radiated pappus, on a large stipe.

The herbaceous part of this plant is blanched, and used on the continent as a salad; but in this country, although it is designated by the Edinburgh and Dublin Colleges, yet it is very seldom used, the root possessing much more of the principle on which the medicinal powers of the plant depend. The recent full-grown root only should be used. It is white, and covered with a brown cuticle.

Qualities. — Dandelion is inodorous, but has a bitter, somewhat sweetish acidulous taste. The milky juice reddens the vegetable blues, owing, according to Hermbstadt³, to the presence of tartaric acid. Water extracts its virtues better than alcohol; and scarcely any thing is taken up by ether: yet Dr. John detected caoutchouc in it. The decoction is precipitated by infusion of galls, and solutions of nitrate of silver, muriate of mercury, and superacetate of lead. Sulphate of iron

¹ Ἀφάκη Græcorum.
Marsh Dandelion.

² It must be distinguished from *Leontodon palustre*,

³ Thomson's *Chemistry*, 4th ed. v. 643.

strikes with it a pale olive colour, and after some time throws down a precipitate. Hence it is probable that the active principles of taraxacum are extractive, gluten, a bitter principle which does not appear to be resinous, and tartaric acid either free or as a supertartrate. The above re-agents are incompatible with the decoction.

Medical properties and uses.—Dandelion is aperient, and diuretic. It has been long used on the continent as a remedy in jaundice, dropsy, pulmonic tubercles, hepatic obstructions, and some cutaneous diseases.¹ In this country it has been lately tried: and although its powers appear to have been overrated by the German physicians, yet it certainly possesses some efficacy in these diseases: and Dr. Pemberton affirms, that he has seen great advantage result from using the extract in chronic inflammation and incipient scirrhus of the liver, and in chronic derangements of the stomach.² It may be given in the form of extract, or of infusion, made by boiling ʒij of the sliced root in Oij of water, down to a pint, and to the strained fluid adding ʒiij of supertartrate of potass: fʒij may be given for a dose three or four times a day.

Official preparation. *Extractum Taraxaci*, L. D.

LICHEN.

Cl. 24. Ord. 5. Cryptogamia Algæ. Nat. ord. Algæ.

Generic Char. Male. Scattered warts.

Female. Smooth shields or tubercles, in which the seeds are embedded.

Species 1. L. Islandicus. Iceland or Eryngo-leaved Liverwort.

Engl. Bot. 1830. *Flor. Danica*, 155. *Regnault, Observations on*

Pulmonary Consumption. fig.

Species 2. L. Roccella. Dyer's Lichen, or Orchall. *Engl. Bot.* 211.

1. LICHEN ISLANDICUS.

Official. LICHEN. *Lond.* LICHEN ISLANDICUS. *Edin. Dub.* Iceland Liverwort.

Syn. Lichen d'Islande (F.) Isländisches Moos (G.) Lichen Islandico (L.)

This species of lichen is an indigenous perennial. It is very abundantly found in Iceland, and in the north of Germany; and is more or less common on all the heaths and mountains of the north of Europe.³ It grows to the height of two or three inches only, and has a rugged bushy aspect. The frond is dry, coriaceous, lobed and lacinated, the lobes being subdivided and notched, resembling in appearance a buck's horn; but concave above and convex beneath; their surface is smooth, shining, and blistered; the margins beset with short, very minute, rigid, parallel hairs: and the colour of the whole is greenish yellow, or grayish brown.

¹ Bergius, *Mat. Med.* ii. 649.

² *Diseases of the Abdominal Viscera*, 42.

³ It grows abundantly in the Asturias. *Journ. de Physique*, 1806.

This plant is used in Iceland and Lapland as an article of diet; being boiled in broth or milk after being freed from its bitter by repeated maceration in water, or dried and made into bread. It has of late years been brought in considerable quantity to this country for medicinal purposes.

Qualities. — The dried lichen differs very little in its appearance from the recent plant. It is inodorous, and has a bitter mucilaginous taste; is neither very tough nor very brittle, but is not easily pulverized. When macerated in water it absorbs more than its own weight of the fluid, and the blisters appear like little white opaque glands, while the other parts of the plant are diaphanous. If the water employed in the maceration be warm, it acquires a strong bitter taste, very similar to that of an infusion of quassia. The macerated lichen boiled in water affords a yellow-coloured inodorous decoction, which thickens as it cools, and becomes a tremulous jelly, resembling starch, but without any viscosity. After some time this jelly cracks, separates from the watery part, and dries into semi-transparent masses which are not soluble in cold water, but soluble in boiling water; and from which it is again precipitated by infusion of galls. According to the analysis of Proust, 100 parts of lichen afford 64 parts of a substance insoluble in hot water, somewhat resembling vegetable gluten, 33 parts of a matter soluble in hot water, resembling starch, and three parts of a bitter extractive principle.¹

Medical properties and uses. — Iceland liverwort is tonic, and demulcent. From some remarks of Linnæus, made in 1737 in the *Flora Lapponica*, it would appear that the Danish physicians had long before that time employed this lichen, and found it efficacious in hæmoptysis, and pulmonary complaints; but it did not excite the attention of even the continental physicians, till after Scopoli's observations on it, in 1769, were published; and very few years have passed since it was known as a remedy in this country. Its virtues for the cure of phthisis have been very highly extolled; but experience has not altogether confirmed the truth of the praises which have been lavished on it.² Its supposed specific effects are said to depend on the combination of its tonic bitter and its demulcent properties. As a demulcent it is certainly superior to the mucilages; and owing to the bitter principle it contains, its decoction affords all the good effects that can be obtained from the other demulcents, and the mucilages, without loading the stomach. It allays the tickling cough, and relieves the oppressed breathing; involves the acrid matters contained in the stomach and bowels

¹ *Journal de Physique*, 1806.

² It still possesses a high reputation as a remedy for phthisis, by the natives of Iceland. *Mackenzie's Travels*, 4to. *Appendix*, p. 411.

which often induce diarrhoea, and renders more bland the whole mass of animal fluids, so as to mitigate hectic fever, while at the same time it tends to invigorate the digestive organs. Still, however, its efficacy in phthisis is very circumscribed; but the circumstances above enumerated ought not to be overlooked, nor the Iceland lichen regarded, as it often is, as a demulcent not more worthy of notice than the other articles of the same class. Besides phthisis, it has been also found useful in debilities after acute diseases, and in emaciations, particularly those arising from the great discharge of ulcers; in diarrhoeas, dysentery, and hooping-cough.

It is generally exhibited in the form of decoction; (See *Preparations* and *Compositions*;) but as the bitter proves hurtful where the lungs or other viscera are actively inflamed, that part must be therefore separated. This is effected by cutting or pounding the lichen, macerating it in several waters, and then, after boiling it for ten minutes, and decanting off the water, boiling it to the form of a mucilage in a fresh portion of water.

Official preparation. *Decoctum Lichenis*. L. D.

2. LICHEN ORCELLA.¹

Official. LITMUS; LACMUS TINCTORIUS. *Dub.* Litmus.

Syn. Orchel, Orseille (F.) Oricello (I.) Orciglia (S.)

This is an indigenous lichen, found in Portland island; but as an article of commerce it is obtained from the Levant; and also the Canary islands² which produce annually, 2600 quintals. It is a small species, seldom exceeding two inches in height, and is firmly fixed to the rocks by a solid base. From this base rises a tuft of worm-like stems, round, acutely pointed, often curved, more or less branched, smooth, of a white, gray, or brownish hue, and studded about their upper part with scattered tubercles, replete with white powder, which have been thought the seeds; but the fructification of this species is not well understood.

From this lichen is prepared the *argol* or *archil* of commerce. It was known to the ancients, being the *Λειχην* of Dioscorides and the *Phycos thalassion* of Pliny. Its use as a dye, was, however lost; till it was again accidentally discovered by a merchant of Florence, in 1300³, observing that urine gave the lichen a fine violet colour. The preparation was long a secret, and was confined to Florence and Holland; but it is now known in England, and large manufactories of it are car-

¹ Vide *Dillenius' Hist. Muscorum*, 4to. p. 120. tab. 17. fig. 39. where it is figured under the name of *Coralloides corniculatum fasciculare tinctorium, fusci teretis facie*.

² The ancients named the Canaries the purple Isles, from the abundance of orchilla which they yielded. *Mem. de l' Acad. des Inscriptions*, tom. iv. p. 457.

³ *Thomson's Chemistry*, 4th ed. v. p. 254. *Bancroft on Philosophy of Colours*, 2d ed. vol. p. 292.

ried on in London and Liverpool. The lichen, after being dried and cleaned is reduced to powder in a mill resembling an oil-mill.¹ It is then mixed in a vat with one half of its weight of pearl ash, and moistened with human urine: fermentation soon succeeds, and is kept up by stirring, and by successive additions of urine, until the colour of the materials changes first to red and then to blue. In this state it is mixed with a third of its weight of good potash, and spread out to dry.² Chalk is sometimes added to it, but with no other view than to increase the weight.³ It is generally sold in the form of cakes, but sometimes in that of a moist pulp.

Qualities. — Prepared argol has a slight violet odour, and a mawkish taste, leaving some degree of pungency in the mouth. When moist, the form of the lichen is evident in the pulp. It communicates to water and to alcohol a beautiful violet colour, which however is very evanescent: all acids and salts with an excess of acid change it to red, which is again destroyed and the blue restored by the addition of alkalies; and even exposure to the air of a room in which many people are assembled, reddens the watery infusion. The tincture is least liable to change when kept, if it be reddened by an acid and kept in close vessels.

Use. — This species of lichen is said to have been “administered medicinally with an intention of allaying the tickling attendant on phthisis, and in hysterical coughs⁴,” but we must suppose the recent lichen is meant, or before it has undergone any preparation as a colouring matter. We know of no other use of the prepared lichen than as a dye stuff, or a chemical test of the presence of acids; and it is certainly the most delicate.

LINUM.⁵ *Spec. Plant. Willd.* i. 1533.

Cl. 5. Ord. 5. Pentandria Pentagynia. *Nat. ord.* Gruinales Linn. Caryophyllæ Juss.

G. 590. *Calyx* five-leaved. *Petals* five. *Capsule* five-valved, ten-celled. *Seed* solitary.

* with alternate leaves.

Species 1. *L. usitatissimum*. Common Flax. *Med. Bot.* 2d ed. 566. t. 202. *Smith Flora Brit.* 342. *Curtis Lond. fasc.* 5. t. 22.

** with opposite leaves.

Species 26. *L. catharticum*. Purging Flax. *Smith Flora Brit.* 344. *Eng. Bot.* 382.

1. LINUM USITATISSIMUM.

Official. LINI USITATISSIMI SEMINA. *Lond. Edin.* LINUM; SEMINA. *Dub.* Linseed, and Linseed oil.

Syn. Grains de Lin. (F.) Leinsaamen; Flachsamen (G.) Semi di Lino (I.) Laxor (S.) Busrue (Arab.) Tisi (H.) Atasci (San.)

¹ Sometimes it is not ground, but prepared in the entire state.

² Nicholson's *Journ.* 4to. ii. 311.

³ Archil is chiefly used by the dyers, and in times of scarcity the lichen has been sold at 1000l. sterling the ton. It is often mixed with the lichen fuciformis.

⁴ Translation of the Dublin Pharmacop. p. 165.

⁵ *Arvo* Dioscoridis.

The common flax is an annual plant, flowering in July. It is supposed to have been originally brought from those parts of Egypt which are annually inundated by the rising of the Nile; but it is now found growing wild in this country; and is cultivated in most parts of Europe. The root is simple and fibrous. The stem is erect, round, smooth, slender and leafy; branched with a panicle at the summit, and rising about two feet in height. The leaves are small, lanceolate, entire, obscurely three-nerved, smooth, sessile, standing nearly upright, and alternate on both the stem and branches. The flowers are petiolate; the calyx persistent, composed of five sharp-pointed, keeled, trinerved, ovate leaflets; and the corolla consists of five notched, oblong, sky-blue, streaked petals, which spread into funnel-formed blossoms. The filaments are white, dilated, and slightly united at the base; the germen is ovate, and crowned with five blue; thread-like, spreading, reflected stigmas. The capsule is globular, the size of a common pea, crowned with a sharp spine, formed by the junction of the spines of the valves in one point: and containing in each cell an elliptical shining seed.¹

Although this plant is extensively cultivated in Britain, yet the greater part of the linseed used here is brought from the Baltic. The seed ripens in September; and the plant is then pulled up as soon as the heads begin to change brown and hang downwards, otherwise the seeds are soon scattered.

Qualities.—These seeds are inodorous, and have an oily, mucilaginous, sweetish taste. They are small, flat, oval, and covered with a smooth, shining, brown-coloured cuticle, which abounds with a mucus, that can be extracted pure by infusion in boiling water. By expression they yield one-sixth of their weight of fixed oil. The mucus of linseed is colourless, insipid, inodorous, and resembles in its viscosity mucilage of acacia gum; but differs from it in the following particulars: Alcohol precipitates it in white flocks, but the liquid remains clear; superacetate of lead throws down a dense precipitate; but oxy-sulphate of iron and silicated potash produce no sensible effect. For the qualities of the oil, see *Preparations*.

Medical properties and uses.—Linseed is emollient and demulcent. The mucus obtained by infusion is a cheap and very useful demulcent in catarrh, pneumonia, diarrhoea, and dysentery: visceral inflammations, calculus, gonorrhoea, ardor

¹ The partitions of the cells are singular. Gærtner thus describes them: "Dissepimenta membranacea, conduplicata, laminis suis extrorsum partitis, ita valvularum marginibus inserta, ut, cum hæc dehiscunt, illæ corii foliis adinstar explicentur:" and adds, "Dissepimentorum in Radiola atque Lino fabrica, hactenus sine pari est, et essentialium hujus generis præbet characterem." *De Fructibus*, ii. 147.

urinæ; and during the exhibition of oxymuriate of mercury. When the seeds are boiled in water, the mucus is obtained in union with a portion of the oil; forming a useful local remedy when given in the form of enema in abrasions of the intestines and tenesmus, particularly in the advanced stage of puerperal fever, when the offending matter in the bowels stimulates to frequent and involuntary stools: but the portion thrown up must be small in quantity.* The seeds ground into powder or meal, and simply mixed with boiling water, form an excellent poultice; valuable on account of the facility with which it is made.

Official preparations. *Infusum Lini. L. Oleum Lini. L. E. D.*

2. LINUM CATHARTICUM.

Officinal. LINUM CATHARTICUM. *Lond.* LINUM CATHARTICUM; *HERBA. Dub.* Purging Flax.

Syn. Lin Purgatif (F.) Purgier factis (G.)

This is an indigenous annual plant, found on dry and hilly pastures, flowering from June to August. The root is small, and sends up several delicate, leafy, erect, smooth stems, simple at the base, but above dichotomous and many flowered, and from three to nine inches high. The leaves are opposite, of a subelliptical lanceolate shape, obtuse, entire, green on the upper surface, and glaucous beneath. The flowers are small, and white; nodding before they open, and then erect. The leaves of the calyx are pointed, serrated, and one-nerved; the petals obovate, acute, white, and spreading; the filaments are united, forming a circle round the lower part of the germen, which is furnished with capitate stigmas. The seeds are yellow and shining.

Qualities.—Purging flax, whether in the recent state or dried, is nearly inodorous, and has a bitter subacid taste. Water extracts the virtues of the plant, which communicates to it, besides its sensible qualities, a yellow colour. Macerated in ether it affords a green tincture, which deposits when it is evaporated on the surface of water a green bitter resin, and an extractive matter, on which the virtues of the plant seem to depend.

Medical properties and uses.—This species of flax was celebrated as a purgative by Gerarde. It may be given in the form of infusion, made with ʒij of the dried plant, and fʒij of boiling water; or ʒj of the dried plant in powder may be taken for a dose. But it possesses no particular advantages, and appears only to swell unnecessarily the list of purgatives.

LYTHRUM. *Spec. Plant. Willd.* ii. 865.

Cl. 11. Ord. 1. Dodecandria Monogynia. Nat. ord. Calycanthemæ

Linn. Salicariæ Juss.

* Denman's Midwifery, ii. 251.

G. 951. *Calyx* twelve-toothed. *Petals* six, inserted into the calyx. *Capsule* two-celled, with many seeds.

Spec. 1. *L. Salicaria*.¹ Loosetrife, or Purple Willow Herb. *Med. Bot.* 2d edit. *Smith Flora Brit.* 510. *Engl. Bot.* 1061.

Officinal. LYTHRUM SALICARIA; HERBA. *Dub.* Loosetrife.

This is an indigenous perennial plant, found wild in almost every part of Europe, in marshes and on the banks of rivers, flowering from July till September. It is an elegant plant. The root is woody, branched, and extended; sending up an erect, leafy, slender, reddish, downy stem, about three feet in height, quadrangular, and sometimes hexagonous. The leaves are opposite, sessile, lanceolate, and cordate at the base; smooth on the upper surface, but pubescent beneath, and at the margin. The flowers are in the axillæ of the leaves, forming a leafy spike of a verticillated aspect: the calyx is red, hairy, and the segments of different shapes, six being awl-shaped and erect, and six small, ovate, concave, and bent inwards; the petals are oblong, undulated, and of a purple colour. The stamens are alternately longer, and inflected. The capsule is elliptical and small.

Qualities. — Loosetrife in the dried state is inodorous, and has an herbaceous subastringent taste. In coction with water it renders the fluid mucilaginous; and the decoction strikes a black with sulphate of iron.

Medical properties and uses. — This plant is astringent and tonic. It has long been celebrated in Ireland as a remedy in diarrhœa; and has also been found useful in dysentery. It is always proper to give a purgative prior to its use being begun. The best form of giving it is that of decoction.

LYTTA. *Syst. Nat. Gmelin.* 2013.

Cl. 5. *Ord.* 1. Insecta Coleoptera *Linn.* Eleuterata. *Fabric.*

G. 215. *Feelers* filiform. *Palpi* four, unequal; the posterior ones clubbed. *Thorax* nearly round. *Head* inflected, gibbous. *Elytra* soft, flexible.

Species 1. *Lytta vesicatoria.* Blistering Fly.

Officinal. LYTTA. *Lond.* CANTHARIS VESICATORIA. *Edin.* CANTHARIS. *Dub.* Blistering or Spanish Fly. *Cantharides.*

Syn. *Cantharides* (F.) Spanische Fliegenoder Kanthariden (G.) Cantarelle (L.) Cantharidas (S.)

This insect is found on the privet, ash, elder, lilac, white poplar, and the tartarian honey-suckle, in Spain, Italy, France; and to a certain extent over all Europe. They are two-thirds of an inch in length, and one-fourth of an inch in breadth, oblong, and of a green, gold shining colour; with soft elytra or wing sheaths, marked with three longitudinal raised stripes, and covering brown membranous wings. The body is terminated by

¹ *Aufgoss* Dioscoridis.

two small callous sharp spines; and on the head are two black, jointed feelers. When alive they have a foetid odour.¹ They are gathered by smoking with brimstone the trees on which they are found; and catching them on a cloth spread underneath. They are sometimes simply shaken from the trees, and then killed by the steams of boiling vinegar, and dried either by the sun or in a stove.

Blistering flies are imported from Sicily, but chiefly from Astracan, packed in casks and small chests. The best are of a lively fresh colour, a small size, and not mouldy, nor mixed with the *Melolontha vitis*; an insect resembling them in some degree, but possessing no vesicating property. It may be distinguished by its form, which is altogether more square than that of the *Lytta*, and by its black feet.² If the blistering flies have been properly dried, and are kept in a well-stopped glass bottle, they will remain unchanged in appearance, and retain their acrimony for a great length of time³: but sometimes, in spite of every precaution, they are attacked by a small worm, which, however, feeds on the inactive part only of the fly, reducing it to a powder, that still possesses the active quality of the entire insect. They soon putrefy when kept in a damp place; and, therefore, should be occasionally spread out to the air.

Qualities.—Blistering flies have a heavy disagreeable odour, and an acrid taste. Lewis found that their active constituents are soluble both in water and in alcohol; and that the residuum with these menstrua is inert. Thouvenel, Beaupoil, and Robiquet, have analysed the insect; but their inquiries lead to no very certain conclusions.

Thouvenel treated the entire flies with *water*, *alcohol*, and *ether* separately, submitting them to the press; and obtained the following results: 1st, Three-eighths of reddish yellow, very bitter extractive, affording by distillation an acid liquor: 2d, One-tenth of concrete, waxy, green oil, having the odour of the flies, and yielding by distillation a very sharp acid and a thick oil: 3d, One-fiftieth of concrete yellow oil, apparently the colouring matter of the insect: and 4th, One-half of solid parenchymatous matter. He imagines that the blistering principle resides in the green waxy oil; and that the strangury

¹ It is asserted that a person who sits under a tree on which many of these insects are, particularly at the time of copulation, experiences ardor urinæ, pain of the bladder, and sometimes ophthalmia.

² Fabricius thus describes the *Melolontha*; "*Maxilla brevis cornea; apice multidentata. Antennæ lamellatæ. Melolontha vitis. Viridis, thoracis lateribus flavis, pedes nigri.*" Vide *Römer Gen. Insect.* t. 1. fig. 11.

³ Van Swieten kept them upwards of thirty years, in a glass vessel not particularly well corked, and they still produced vesication.

produced by blisters is the effect of the acid obtained from this oil by distillation.¹

Beauvoir in his researches found that an aqueous infusion of the flies, when exposed to the air, lets fall a yellow precipitate, exhales an ammoniacal odour, and reddens tincture of turnsole: the addition of ether or alcohol divides it into two parts; viz. a black gluey matter insoluble in alcohol, and a yellowish-brown, very soluble matter.² The black matter blistered the skin without affecting the urinary organs; the yellow matter did not blister when applied alone, but blistered quickly when united with wax; and a green matter, which he also obtained, acted under similar circumstances, but less actively.

Robiquet asserts that the flies, when recently collected, yield some uric acid. By treating them with water, alcohol, and ether, he obtained a peculiar matter, in the form of small crystalline micaceous plates, insoluble in water and in cold alcohol, but soluble in boiling alcohol and in ether; and very soluble in oils; on the presence of which the vesicatory property of the flies depend; and which, in combination with oil, might supersede their use. Dr. Thomson has named it *Cantharidin*.³

Medical properties and uses. — Blistering flies internally exhibited are powerfully stimulant and diuretic; and externally applied, rubefacient and epispastic. Notwithstanding their acrimony, they appear to have been given as an internal remedy so early as the time of Hippocrates, who prescribed them chiefly in cases of dropsy and amenorrhœa. They have a considerable effect on the urinary organs, even when externally applied; and unless their internal exhibition be conducted with great caution, they act with so much violence on the kidneys, bladder, and small intestines, as to produce bloody urine, purulent stools, insupportable pains of the abdomen, vomiting, and other symptoms of intestinal inflammation; convulsions, delirium, syncope, and death. They have, however, been successfully employed in dropsy, obstinate gleet⁴, leucorrhœa, and incontinence of urine arising from paralysis of the sphincter

¹ *Annales de Chimie*, xlvii. 280.

² From one ounce of cantharides he obtained, Of black matter 2 gros 2 grs. Yellow matter 1—2. Green matter 1—8. Parenchyma 4—36. Phosphate of lime 12 grains. Carbonate of lime 2 grains. Sulphate and muriate of lime 4 grains. Oxide of iron 2 grains, and an acid, the quantity of which was not ascertained. *Annales de Chimie*, xlviii. 33.

³ Vide *System of Chemistry*, 5th edit. iv. p. 436. and *Ann. de Chim.* lxxvi. p. 308.

⁴ Probably gleet was included in the term gonorrhœa by the old writers, who frequently mention cantharides as a remedy for gonorrhœa. Thus Boeccone (*Museo di Fisica*, 1699) says, they were much used by the Sicilians in gonorrhœa.

vesicæ. The free use of diluents, as milk, almond emulsion, and mucilaginous solutions, is absolutely necessary during their employment to moderate their action. The tincture is the more proper form for internal use; or, if given in substance, the dose should not exceed one grain of the powdered flies, formed into a pill with opium or extract of henbane. But they require to be continued for some time, in order to prove beneficial.

Blistering flies, when applied to the skin, act as a local stimulant, first reddening and inflaming the part, and then producing from the exhalants a copious discharge of serum under the cuticle, so as to raise a blister. These effects they produce more certainly and completely than any vegetable acid; and therefore they are more generally employed as a vesicatory than any other substance.

It is uncertain whether blisters were used by the ancients, who we know employed some epispastics; but in the hands of modern practitioners they are daily and successfully employed. Although their first operation is local, yet, under certain circumstances, the stimulus is sufficient to rouse the whole nervous energy, and excite the general system, so as to render their application useful in diseases of diminished excitement: and on this account, in deep-seated local affections, when the inflammatory diathesis is considerable, the force of the circulation must be diminished by bleeding, purging, or other evacuates, before blisters can be advantageously applied. The diseases of debility in which they are useful are low nervous fever, when accompanied with delirium, pale urine, frequent sighing, great anxiety, deafness, a fixed stare and glistening eyes. In palsy, and gutta serena, they are applied to the forehead over the supra-orbital nerve. They are found efficacious also in spasmodic and convulsive affections, from the irritation they produce overcoming the morbid irritation which induced the spasm. Blisters, by their local action, relieve internal inflammatory diseases, by altering the balance of the circulation; and, in part, by diverting the attention from the prior seat of pain. Hence their utility in ophthalmia, applied behind the ears, on the temples, or the forehead; in phrenitis, over the head; in cynanche tonsillaris, and in small-pox, when the swelling of the fauces affects respiration, upon or near the neck; and in phthisis, catarrh, hepatitis, pneumonia, gastritis, and other intestinal inflammations, immediately over the seat of pain.¹ In acute rheumatism, par-

¹ Contrary to the opinion of the older physicians, who imagined that the efficacy of blisters arose from the serous evacuation, experience has fully proved that their utility is in the ratio of their vicinity to the affected part.

ticularly that variety of it named sciatica, they have been found very useful. On the same principle caries in the bones and joints, or a disposition to it, is often cured by the repeated application of blisters. "Under their application the enlargements obviously subside; the crepitation between the bones, the consequence of the abrasion of the cartilages, ceases to be felt when the blister begins to operate, the use of the joint is effectually recovered, and ankylosis prevented."¹ A succession of blisters, also, to the vicinity of an inflamed organ is more beneficial than a protracted discharge from one; and a second blister often relieves after the first has failed. Blisters are contra-indicated in diseases of great debility, where there is a tendency to mortification; as in the low stages of petechial fevers, cynanche maligna, confluent small-pox, and malignant measles; and in dropsy, in which they are apt to occasion a very painful, dangerous erysipelas, and gangrene. Peculiar idiosyncrasies forbid their use in some persons; as they irritate, heat, produce thirst, pain, tremors, and sometimes convulsions. In those of irritable temperaments their application is often attended with strangury and bloody urine; and this effect is much increased if the blister be applied over an abraded surface, as a newly shaved head, or if the blister plaster be allowed to remain too long on after the blister has risen. To prevent strangury from the application of blisters, camphor has been erroneously regarded as a specific. It is more effectually prevented and relieved by copious dilution with milk, and mucilaginous fluids; and by fomentations of warm milk and water to the blistered part after the removal of the plaster: and much inconvenience of this nature may be prevented by interposing between the vesicatory and the skin, a piece of gauze, wetted with vinegar, and applied smooth, and close over the plaster.

The dose of the flies, when given internally is gr. j to grs. iij.

Officinal preparations. *Tinctura Lyttæ*. L. *Emplastrum Lyttæ*. L. *Emplastrum Cantharidis vesicatoriæ*. E. *Ceratum Lyttæ*. L. *Unguentum infusi Cantharidis vesicatoriæ*. E. *Unguentum Cantharidis*. D. *Unguentum Pulveris Cantharidis vesicatoria*. E.

MAGNESIÆ SULPHAS. Lond. **SULPHAS MAGNESIÆ.** Edin. **SULPHAS MAGNESIÆ**; olim *Sal catharticum amarum*. Dub. Sulphate of Magnesia. Bitter purging Salt.

Syn. Sulphate de Magnesie (F.) Schwefelsaure Magnesia (G.) Sale amaro; Ossisolfato di Magnesia (I.)

This salt is found native in a pure state²; but it is more

¹ Ford on Diseases of the Hip-joint, 53.

² In the mercury mines of Idria it is found crystallized, and named by the Germans *Haarsalz*. According to Klaproth, it contains 1 per cent. of oxide of iron. *Analyt. Ess.* 80.